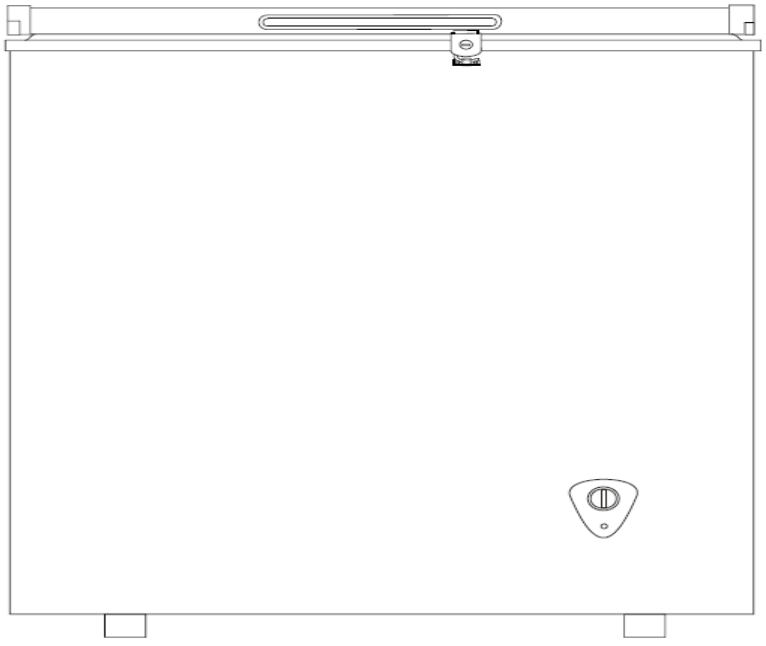
*Chest Freezer*

# Service manual

MODEL: ***C98CFW13 & C98WFW14***
***FC-13DD4SA1(BD-98/HC(E)***



**NOTE:** This is a basic model.the shape and specification of Freezer is subject to change.

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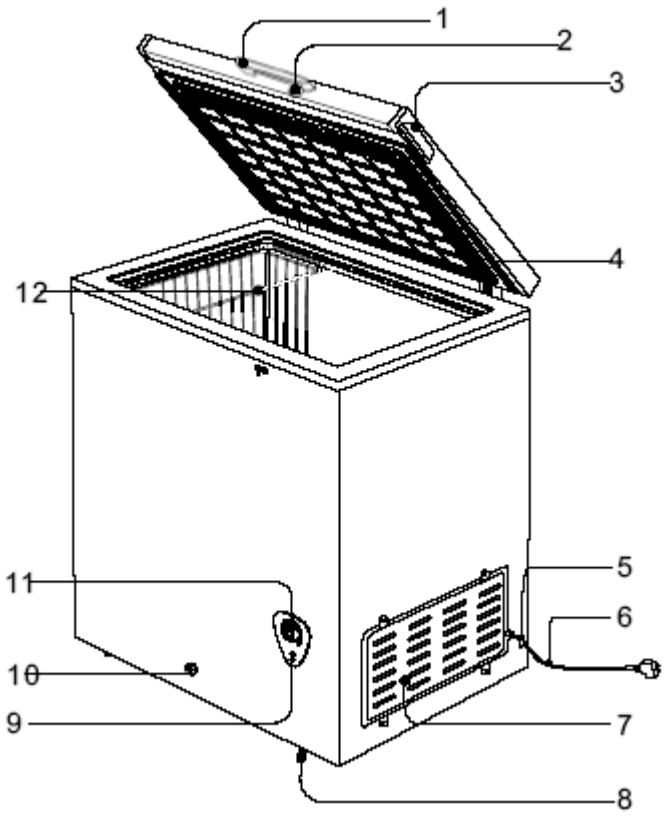
## Parts Description

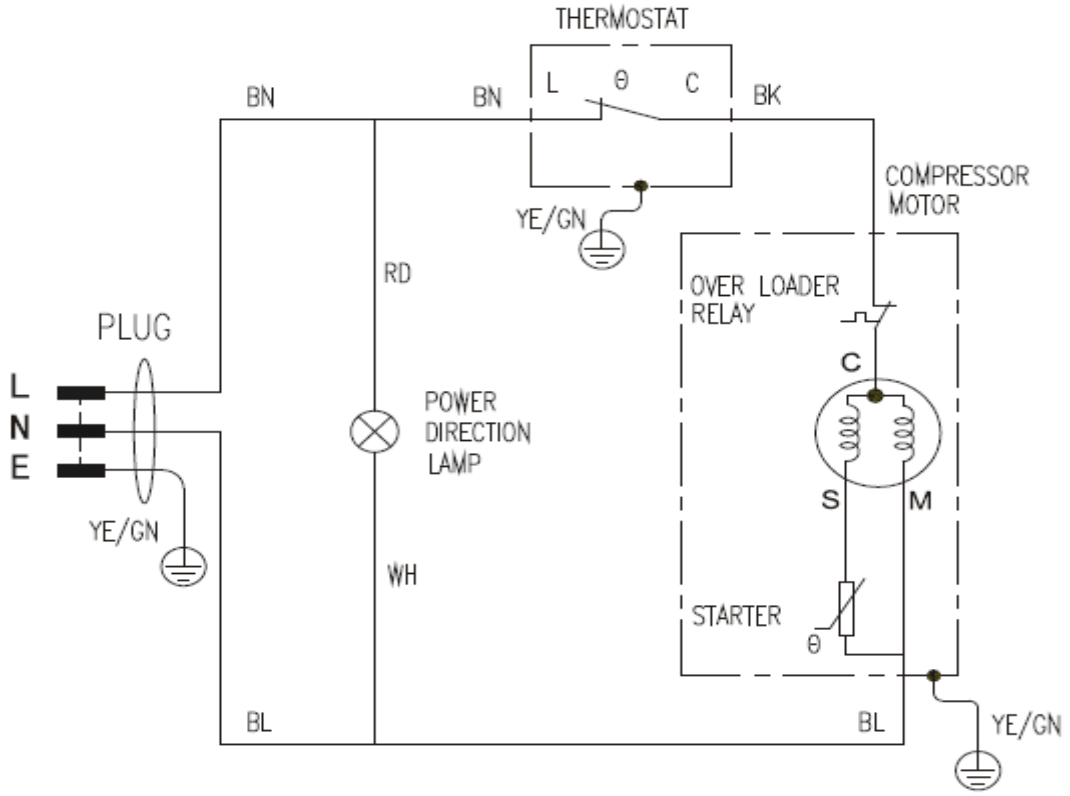



| | |
|---|---|
| 1 | Door knoble |
| 2 | Lock |
| 3 | Door |
| 4 | Hinge |
| 5 | Supply cable clamp |
| 6 | Power supply code with plug |
| 7 | Side cover |
| 8 | Foot |
| 9 | Power lamp |
| 10 | Cap drain |
| 11 | Temperature control volume |
| 12 | Basket |

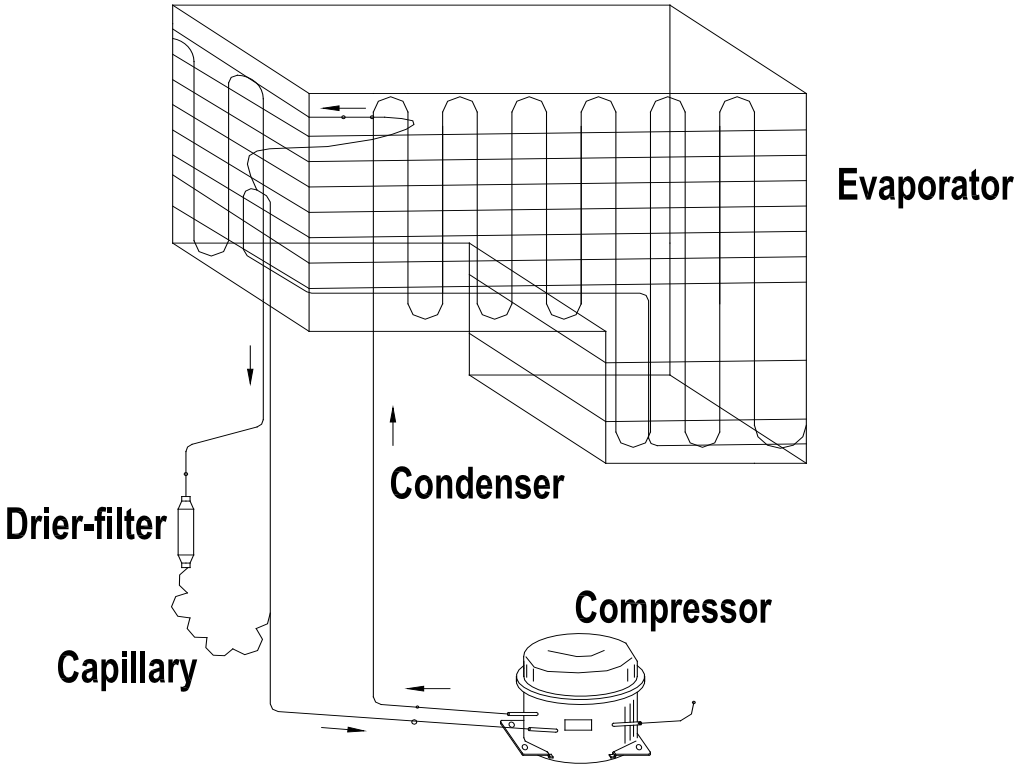
**NOTE:**

This figure is only a sketch Of the Refrigerator, and the actual Products may differ from it.

## CIRCUIT DIAGRAM




COOLING DIAGRAM




## The guide for Disassembly Common parts of Freezer

| The instruction of replaceing thermostat. |
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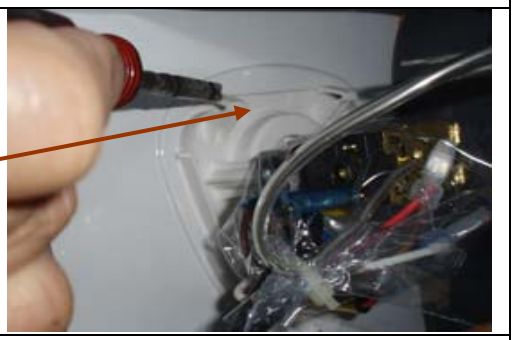
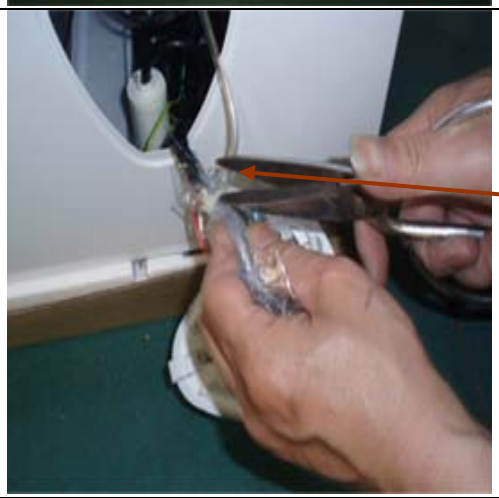
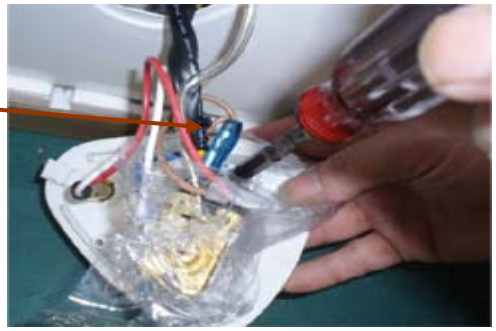
|---|---|---|
| The location of thermostat | | |
| Remove the screws of the Side cover | | |
| loose the fixing buckle of Thermostat panel with screwdriver | |  |
| Cut off the lace and remove the srcew of the thermostat panel |  |  |

| | | |
|---|---|---|
| Unplug the connecting wire | | |
| The instruction of replaceing PTC Starting relay and Overload protector. | | |
| You can easy to use a screwdriver to take down Spring tap and Cover. | | |
| Loose the screws | | |
| Unplug the connecting wire of the PTC Starting relay and Overload protector. | | |

## TROUBLESHOOTING

■ Common default tests method.

| Check the problem by observing | |
|---|---|
| Request | detail |
| a) Checking the temperature of the using condition is according with the specification or not. | temperature between 18-43 degrees |

| | |
|---|---|
| b) Good ventilation, with at least enough room for heat dissipation around the Freezer. | The appropriate space for running unit will be below:<br>Freezer back ≧ 10MM<br>Freezer two sides ≧ 20MM<br>Freezer top side ≧ 30MM |
| C) Whether the voltage range meet the requirement of the nameplate | On normal conditions, voltage fluctuation is allowed to be between 10% of rated voltage, whilst if it exceeds a lot or sometimes high sometimes low, the compressor would be effected and even burned down.<br>When voltage is too high, the motor coil will be burnt down, whilst if it is too low, the compressor would be difficult to start and the frequent starting will lead to burning down the motor. |
| **Check if the Freezer's appearance and internal parts are in good condition.** | |
| a)check the gasket | Through switching the Freezer door to see whether the gasket is tight and if there's gap between the cabinet and seal. |
| b)check the door switch | If the lamp is in good condition but it doesn't work when opening the door, we should check the door switch. |
| c)Check the thermostat knob | Checking the location of thermostat knob is directly connected with the Freezer's cooling. |
| **Observe all parts of the Freezer** | |
| a)Check the cooling speed | To check the cooling speed of freezing cabinet with electronic thermometers so as to check if the Freezer is able to lock the cooling and in good cooling condition. |
| b)Check the outside tube | Checking the Freezer's pipeline system mainly exists in checking whether there is leakage: for example,as the seal of Process tube, the suction pipe, the exhaust pipe welding and the connection of drying filter are prone to leak, we should carefully examine. The checking method is to wipe the connection of the tube with a piece of white cloth and see if there's oil, if does, there's leakage. |
| **Discriminate default by temperature** | |
| a)To check the default by measuring compressor's temperature | When the compressor is in normal operation and it will obviously hot. |
| b)To check the default by measuring dry filter's temperature | When the dry filter is in normal condition and it will obviously a little hot. |
| c)To check the default by measuring suction tube's temperature | When the suction tube is in normal condition and and it will obviously cool. |
| d)To check the default by measuring discharge tube's temperature | When the discharge tube is in normal condition and it will obviously a little warm. |
| e)To check the default by measuring condenser's temperature | When the condenser is in normal operation and by testing its temperature, we can assure that the temperature from the entrance to the exit is regressive (the entrance is hotter than the exit). |
| f)To check the default by touching evaporator's frosting | When in normal operation and we touching the evaporator's frosting, it shall not easy to erase. |
| **Discriminate default by running noises** | |
| a)Checeking the compressor's noise | When compressor is running,it shall go with rhythmic low-frequency sound; |
| b)Checking the Freezer flow' noise | If there's "sisi" sound between capillary and evaporator's transition, the Freezer works normally |

■ The common problem judgement method

| Problem | Cause |
|---|---|
| Freezer can’ t start | 1.1 Is the power cord connecting well?<br>1.2 Is the power voltage too low?<br>1.3 Is the thermostat irrational setting?<br>1.4 Is the ambient temperature too low?<br>1.5 Is the circuit on power?<br>1.6 Is there some default in compressor<br>1.7 Is the refrigeration system blocked by ice or dirty ,please stop the unit and restart after 10 minutes to see if the compressor can start. |
| Weak cooling effects | 2.1 Is there any heat source around the Freezer?<br>2.2 Is there enough space around the Freezer for rejection of heat?<br>2.3 Is the setting of the thermostat appropriate?<br>2.4 Is there too much food or overheating food in it?<br>2.5 Does there open the door frequently?<br>2.6 Is the door completely closed?<br>2.7 Does the gasket destroyed or distort?<br>2.8 Does the refrgeration leak? |
| The unit can not stop running | 3.1 Is there any heat source around the Freezer?<br>3.2 Is there enough space around the Freezer for rejection of heat?<br>3.3 Is the setting of the thermostat appropriate?<br>3.4 Is there too much food or overheating food in it?<br>3.5 Does there open the door frequently?<br>3.6 Is the door completely closed?<br>3.7 Does the gasket destroyed or distort?<br>3.8 Is the thermostat good operation?<br>3.9 Does the refrgeration leak? |
| Ice up in the freezing chamber | 4.1 Is the setting of the thermostat appropriate?<br>4.2 Is there multi-moisture food and too close to the back wall of the Freezer?<br>4.3 Is the ambient temperature too low?<br>4.4 Is the electric parts on good condition, specially the thermostat wich will cause the unit non-stopping. |
| Abnormal noise | 5.1 Is the Freezer stably placed?<br>5.2 Does the Freezer bump other objects?<br>5.3 Whether the internal accessory of the Freezer is in the right place.<br>5.4 Whether the water plate of compressor is fall from the unit.<br>5.5 Does the tube of the refrigeration system bump each other?<br>5.6 The noise sound likes Water flow inside the Freezer,in fact,it is normal, which is caused both when Freezer start and shut-down; in addition, frost-dissolving causes this sound, too, which is a normal phenomenon.<br>5.7 There will be a cracking sound in the cabinet,when the cabinet or cabinet accessory contracting or expanding, this sound will be made, which is normal.<br>5.8 The motor operation sound in the compressor is appears to be louder at night or begin starting , which is a normal phenomenon; also the uneven placing would lead to too much running noise. |
| There is a peculiar smell in the units | 6.1 Is the food with special smell sealed tight?<br>6.2 Does it have long time storing food or degenerated food?<br>6.3 Whether the internal cabinet needs cleaning. |
| the forefront or the middle cabinet heats | 7.1 As fridge Anti-condensation tube is placed here and caused the above phenomenon, which is normal. |
| Freezer’ s two sides | 8.1 As condensation tube is placed here and caused the above phenomenon, |

| | |
|---|---|
| or the back heat | which is normal. |
| the cabinet surface condensation | 9.1 Air humidity is too large. |

## ■ The solution for the common problem.

| 1.Cooling is not enough good<br>(Many reasons might cause that cooling not enough good, as blow:) | | |
|---|---|---|
| Reason | analysis | resolvent |
| 1) Leakage of Gas | If some Gas leaked unit will work not well.<br>Phenomenon of failure:<br>a, lower pressure of liquid cycle system<br>b, high temperature of copper tube of discharging gas, hand feels very hot.<br>C, much noise, sounds like “ZZZZZ”, comes from outlet of capillary.<br>d, there is no or less ice on the evaporator. | Solutions:<br>First find out the point of leaking on tube, and then sealed it, vacuuming it, finally recharge with Gas.<br>Attention please on that below:<br>If you find oil on somewhere, it is possible that leakage point is there. |
| 2) The quantity of Gas is too much | If too much Gas was charged into the cycle system, the extra Gas will occupy some space of evaporator, so that the area of heat exchange becomes less, unit will work not well.<br>Phenomenon of failure:<br>a, higher pressure of liquid cycle system than norm.<br>b, higher temperature of condenser.<br>c, larger electric current of compressor<br>d, there is less ice on evaporator, but there is ice on the absorbing tube.<br>e, when Gas is too much, some Gas liquid might goes back into compressor, compressor will be damaged by liquid. | Solutions:<br>First stop unit for several minutes, and then open charging tube, discharge all of Gas. Change a new filter, and then recharge Gas, finally sealed the system. |
| 3) There is air in the liquid cycle system | The air in system will cause lower efficiency of cooling.<br>Phenomenon of failure:<br>a, higher pressure of liquid cycle system than norm, but the pressure is not over the limit.<br>b, higher temperature of discharging tube.<br>C, much noise | Solutions:<br>First stop unit for several minutes, and then open charging tube, discharge all of Gas. Change a new filter, and then recharge Gas, finally sealed the system. |
| 4)Low working efficiency of compressor | General when a compressor works for many years, some parts of compressor were wear, so that compressor discharge less gas out, unit does not work strongly.<br>Phenomenon of failure:<br>a, lower pressure of discharging, check the pressure of system with pressure meter to see if it is normal.<br>b, higher temperature of compressor surface.<br>C, cut off the discharging tube, to see if | Solutions:<br>Change a new compressor. |

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| | you can block the gas coming out of the tube when compressor is working. | |
| 5) There is thick ice on the evaporator | For defrost Freezer you need to defrost ice termly | Solutions:<br>Turn off the unit and working, open doors for defrosting |
| 6) There is something that blocked the liquid cycle system | Some time there is something blocked the filter of liquid cycle system, so that unit is not cold<br>Phenomenon of failure:<br>a, lower pressure of discharging<br>b, lower temperature of discharging. | Solutions:<br>Change a new filter |

**2.NO COOL**

(Popular failure reasons are below):

| Reason | analysis | resolvent |
|---|---|---|
| 1) Leakage of Gas | Phenomenon of failure:<br>a, leaking fast<br>b, leaking slowly<br>c, no voice of liquid flowing<br>d, cut off charging tube, no gas goes out. | Solution:<br>First find out the point of leaking on tube, and then sealed it, vacuuming it, finally recharge with Gas.<br>Attention please on that below:<br>If you find oil on somewhere, it is possible that leakage point is there. |
| 2)There is some thing that blocked the liquid cycle system | A,Ice blocking<br>Sometime because unknown reason water comes into liquid cycle system, the capillary will be blocked by water after unit runs for period of time.<br>Phenomenon of failure:<br>The unit works well in the inception, after period of time the ice appears in the capillary and becomes more and more, till blocks the hole of capillary completely. In the moment you can find the ice on the evaporator defrosts. The noise of liquid flow disappears. The pressure of absorbing becomes negative. The phenomenon above will appear again and again.<br>The way to check ice blocking:<br>Warm the capillary with a hot towel, after a while the ice in the capillary melt, you can hear a sound of gas flow comes from the capillary abruptly. The pressure of absorbing becomes higher. It is Ice blocking. | Solution:<br>First stop unit for several minutes, and then open charging tube, discharge all of Gas. Blow the cycle system with gas of nitrogen, and then recharge Gas, finally sealed the system. |
| | B, there is offal block the capillary<br>Phenomenon of failure:<br>If the capillary is blocked by | Solution:<br>First stop unit for several minutes, and then open charging tube, discharge all of Gas. Blow the cycle system with gas of |

| | | |
|---|---|---|
| | something such as offal etc., the sound of liquid flow disappears.<br>The ice on the evaporator defrosts<br>The pressure of absorbing becomes negative.<br>Higher temperature of discharging tube<br>The way to check offal blocking: If you warm capillary with the way of checking ice blocking, there is no change. It must be offal blocking. | nitrogen. Change a new capillary and filter, and then recharge Gas, finally sealed the system. |
| COMPRESSOR NEVER STOPS | | |
| Reason | | Resolvent |
| 1)The setting temperature is not reasonable. | | Readjust the Thermostat |
| 2)Thermostat is broken. | | Replace the Thermostat |
| 3)Seal of door is damaged. | | Replace the gasket |
| 4)Too much food in the Freezer | | Please put the food properly. |
| 5)Wind door is broken. | | Replace wind door. |
| 6)Fan motor is broken. | | Replace fan motor |

## ■ Note:

- Before doing these operations above, disconnect the main power supply. Failure to do so could result in electrical shock or personal injury.
- In case of any detailed technical information please check with the technical specifications.

## ◆announcements of Maintenance operation safety

In order to you can safely overhaul the operation must comply with the following, the matters needing attention:

1、Notes:

- The refrigerator maintenance should pay attention to the nearby fireworks, especially in the use of gas tools for after welding, must first will gas flame, can other repair, refrigerant because of flame, the spark and capacitor later produce poisonous gas；
- Never in the poor ventilation and airtight room within the welding；
- Emission refrigerant, be sure to make the room is well ventilated；
- Cut off the compressor muffler and exhaust pipe, attention shall be paid to the surplus within the cold media and internal pressure

2、Unplugged the attaching plug:

- Will the refrigerator for repair, must first pull out the power plug, assure maintenance safety。

3、Prevent to electric shock:

- Usually for repair shall first will cut off power supply. If must be energized check circuit, should be careful to get an electric shock, do not touch charged area. Maintenance if discover the wire aging,

should change in time。

4、The correct use of spare parts:

- Maintenance of the need to replace parts of the same model, must be the parts (repairing parts listed in the table), do not get optional change other models or other brand of spare parts, the more don't maintain spare parts, avoid p other accidents。

5. The correct use of maintenance tools:

- Maintenance must use the proper maintenance tools. Improper use tools may cause bad contact or fastening rickety and accidents。

6. Wire connection:

- Reconnecting first must weld, or use connected terminals, and insulation tape sealing, ensure good contacts。

7. Insulation testing:

- after the maintenance assembly, the insulation resistance testing must use a multimeter to confirm insulation resistance, up to 1 M Ω above, can electrify operation。

8. Grounding check:

- After repair must use a multimeter fortesting grounding resistance , confirm for the grounding resistance is less than 0.15 Ω,namely,grounding is good.if grounding bad or incomplete, should be handled in time, ensure complete, good, reliable grounding。

9. Pay attention to the child:

- The refrigerator for repair, attention shall be paid to prevent children from near, lest produce risk。

10. Clean:

After the maintenance the refrigerator is necessary to clean, and inform the users